

Building the future

A REVIEW OF 2019-2024 EU POLICIES
AFFECTING THE BUILT ENVIRONMENT



FEBRUARY 2025

Introduction

Addressing the building sector's enormous environmental impacts is crucial to achieving the EU's energy, climate, and material efficiency goals. Annually, buildings account for nearly half of the bloc's energy consumption, one-third of emissions, half of all extracted materials, and a third of waste ^{1 2}.

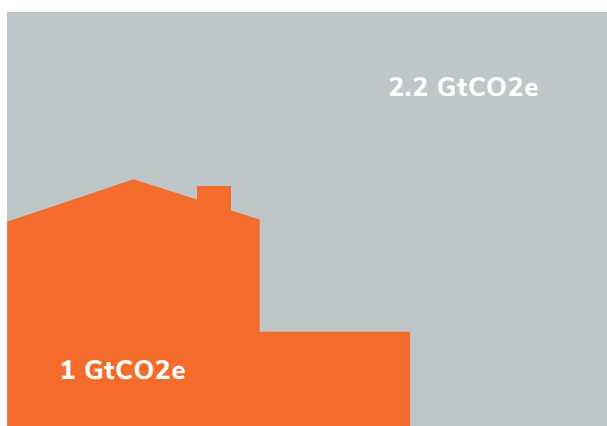
EU law affects the future of buildings in the domains of energy, construction materials, and social aspects. This briefing looks at policy measures agreed during the 2019-2024 policy cycle; lessons from their implementation will inform additional actions to ensure that the EU stays aligned with its commitments and planetary necessity.

To dive deeper into all aspects related to buildings, including water, waste, and nature, and the referenced legal text, check our [background document](#).



Reducing energy use: the Energy Performance of Buildings Directive

Buildings in the EU – private residences, public buildings, office towers, or commercial blocks – are the top users of energy in the EU (see Figure 1 below). In 2021, the European Environment Agency (EEA) reported that energy-related emissions from buildings in the EU 27 accounted for 1 Gt of CO₂-equivalent³, roughly one-third of total GHG emissions at EU 27 level for the same year⁴.



- GHG emissions related to energy use in buildings (2021)
- Other GHG emissions EU-27 (2021)

Figure 1: Greenhouse gas emissions linked to energy use in buildings. (Source: EEA, 2021)

The central law to reduce energy use in buildings has been the Energy Performance of Buildings Directive (EPBD), created in 2002 and updated in 2010 and 2024. Its most well-known aspect is arguably the Energy Performance Certificate (EPC) (Art. 19), an information tool conveying energy-related aspects of a building (see Figure 2).

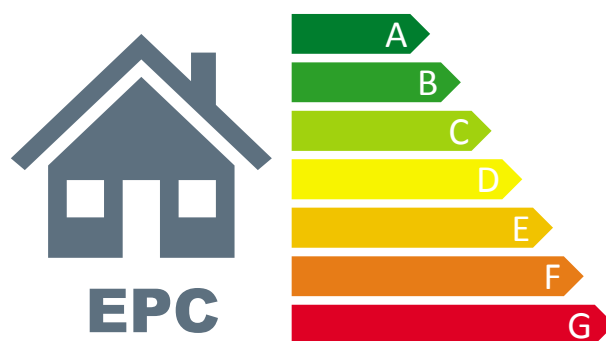


Figure 2: Colour coding usually adopted in Energy Performance Certificates. The A-G scale is mandated in the EPBD 2024 recast and few exemptions are allowed.

The EPBD's most recent revision combines several mechanisms (detailed below) towards the EU's ambitious yet necessary environmental goal of a zero-emitting building stock by 2050⁵.



Establishing overall trajectories to reduce energy demand

The EPBD aims at reducing overall energy consumption by 16% by 2030. Later intermediate reduction targets are left to the Member States' implementation plans (Art. 9, ^a see section 1.3). Importantly, there is no specific energy reduction target for 2050. This means that - despite misinformation - heating, cooling, lighting, and cooking will not be phased out. The 2050 target is only for a zero emitting building stock.

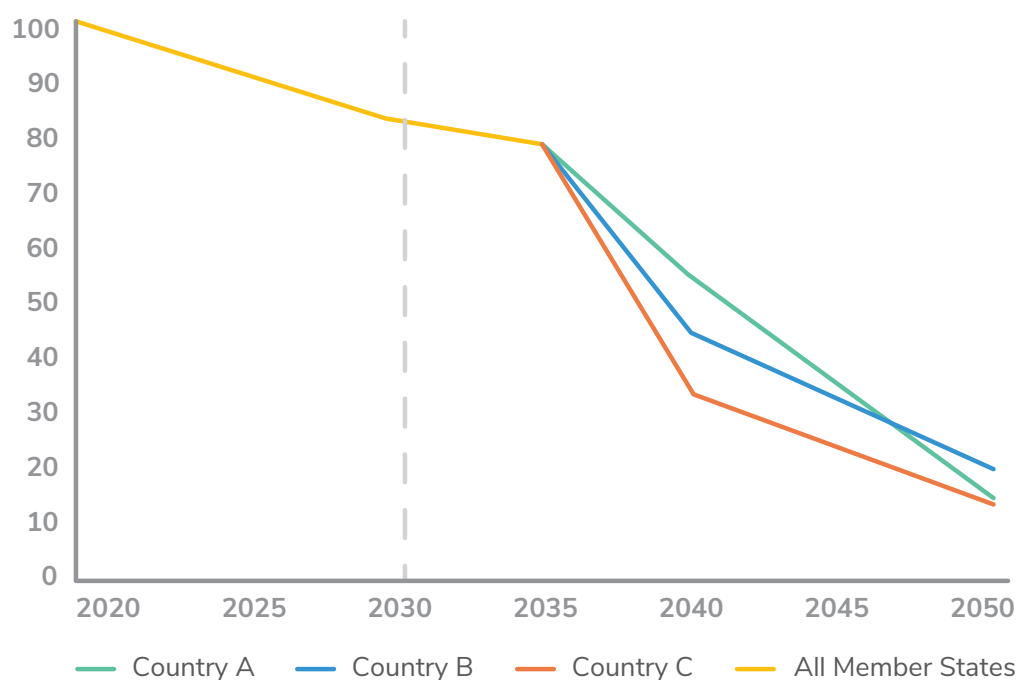


Figure 3: EPBD-mandated and future hypothetical trajectories for energy demand reduction

Setting stringent requirements for new buildings

As of 2030, new buildings (and new public buildings as of 2028) in the EU must be zero-emission buildings (Art. 7(1)), i.e. buildings of high energy efficiency and without installing fossil fuel-based boilers (Art. 2(2)).

^a Differences apply to non-residential (Art. 9(1)) and residential buildings (Art. 9(2)).



Focusing on renovating the worst-performing buildings first

Many existing buildings are energy inefficient. The EPBD recognises that accelerating renovation of the worst-performing buildings will lead to the highest energy savings.

The EPBD requires different approaches for non-residential and residential buildings:

- **For non-residential buildings:** Renovating the 16% worst-performing non-residential buildings by 2030 towards better energy classes (Art. 9(1)) with more stringent targets set for later dates.
- **For residential buildings:** Renovating residential buildings to decrease energy use by 16% by 2030 – and more by later dates. 55% of this reduction is to be achieved by renovating the building stock belonging to the 43% less performant (Art. 9(2)) (see Figure 4).

The EPBD does not oblige individual owners to renovate; it obliges Member States to reach an overall reduction in energy use.

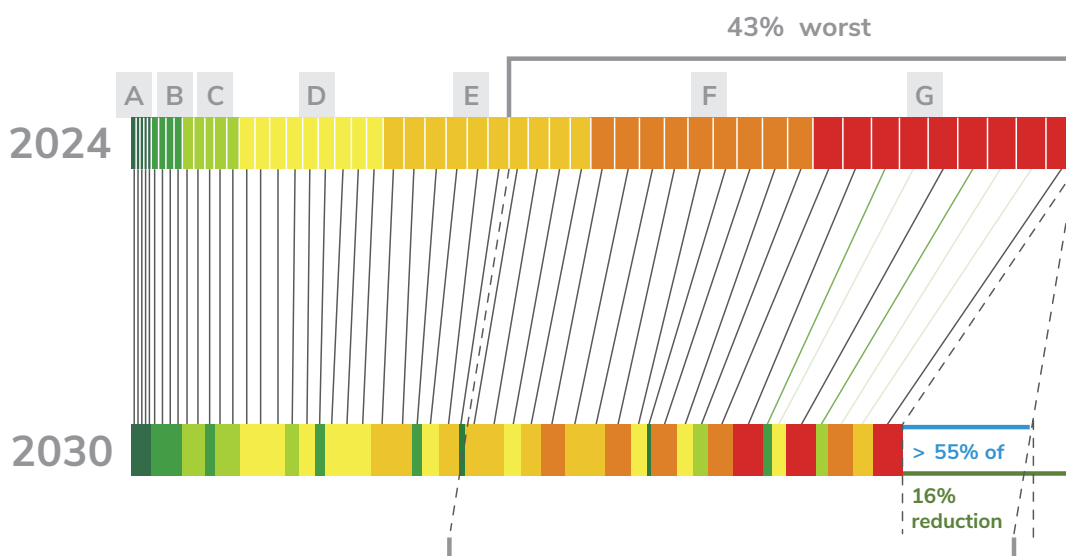


Figure 4: Schematic depiction of the approach for residential buildings according to the recast EPBD

Obliging Member States to provide binding plans

The EPBD is a Directive, which means it requires national transposition, but it sets minimum requirements for all Member States. It gives national governments flexibility on how to reach the targets, but requires National Building Renovation Plans (NBRPs) to be checked and approved by the European Commission (Art. 3, Annex II). NBRPs are required to ensure that

renovation is maximised to meet the committed reduction in energy demand and GHG emissions. To this end, the NBRPs must address the batch of measures with commitments, national minimum requirements, budgetary, and administrative resources as well as financing mechanisms (Art. 3(5)).

Preventing potential social harm from renovation requirements

Energy renovation costs in the short run, but saves money in the long run. Critics of the EPBD have emphasised the former without acknowledging its mechanisms for directing finance to those in need, or

simply the fact that the EPBD does not set individual renovation obligations (see section 1.3).

How will the EPBD address vulnerable households and energy poverty?

The EPBD recognises energy poverty and vulnerable households (Art. 2 (27), (28)), and obliges Member States to take the following measures to support their transition (Art. 17)

- Provide financing and support measures to address up-front costs (paragraphs 1, 3, 7, and 9);
- Use EU revenues from carbon pricing for Member States' renovation activities (paragraph 6);
- Direct financial measures preferentially to vulnerable households (paragraph 18);
- Avoid steep rent increases after renovation and provide support (paragraphs 17 and 19);
- Simplify administrative processes for permitting and financing (paragraph 8);
- Training the necessary workforce (paragraph 12).



Putting an end to financial support for fossil fuel boilers

With only twenty-five years before the zero-emission target in 2050, the EU should stop installing fossil-fuel-based boilers. Yet, as opposed to the stringent requirements for new houses (section 1.2), the EPBD only bans financial incentives for stand-alone fossil-fuel boilers (Art. 17 (15)), and does not ban new installations.



Considering embodied greenhouse gas emissions

The earlier versions of the EPBD were restricted to direct building emissions. In contrast, the new EPBD considers 'lifecycle global warming potential (GWP)' (Art. 2 (24 and 25)), which includes emissions from

energy use as well as from all other lifecycle stages (see Figure 5). Lifecycle GWP must be disclosed as of 2030 for all new buildings, and Member States must gradually set decreasing maximum values (Art. 7 (2) and (5)).

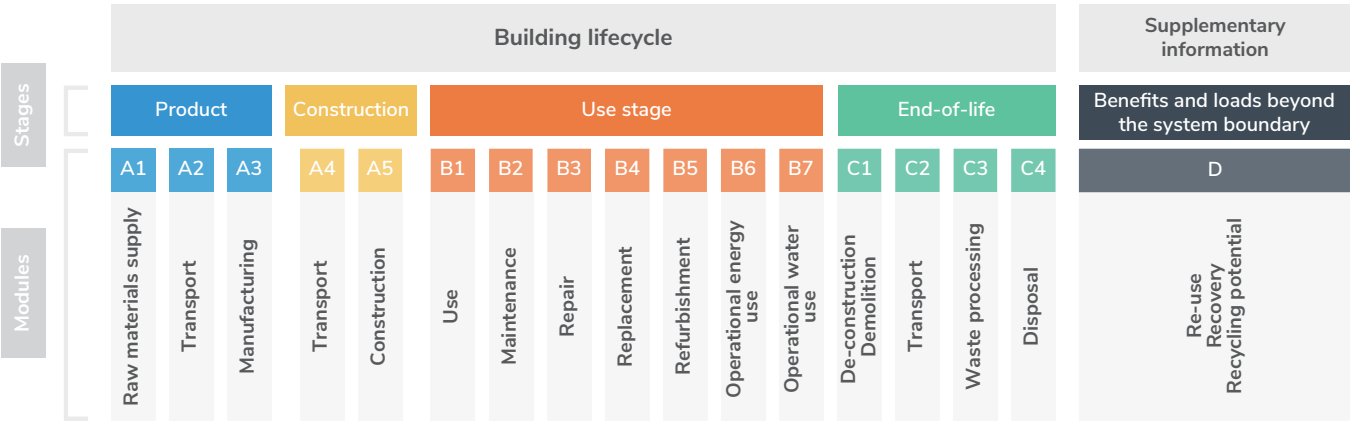


Figure 5: Schematic depiction of the lifecycle stages leading to GHG emissions in buildings (EN 15978)

Promoting bikes, electric vehicles, and on-site renewable energy production

The EPBD sets additional standards to make new constructions easier to use and more sustainable, by mandating bicycle racks and electric charging stations (or pre-cabling) in many non-residential and residential

buildings (Art. 14) ^b. Solar panels are to be installed in many new buildings or upon major renovation (Art. 10) ^c.

^b Different conditions and deadlines apply depending on the type and size of building, the size of existing parking space and other factors.
^c Similar to footnote b

More renewables and energy efficiency

Renewable Energy Directive III: renewable energy for half of the EU's buildings needs

The Renewable Energy Directive (RED) is the key legislation supporting the roll-out of technologies using renewable energy sources ⁶. Since its inception in 2018, following the adoption of the Paris Agreement, it has a clear objective of reducing the EU's reliance on fossil fuels. The 2023 recast of the Directive seeks to increase the current penetration of renewable energy in Europe. That is, from around 23% in 2022, to an overall binding target of at least 42.5% at the EU-level by 2030 –

aiming for 45% (Art. 3) ⁷. This target has been increased significantly from the previous 32% ⁸. As European buildings consume a substantial share of energy (around 16,000 PJ each year ⁹, approximately half of the EU's final energy consumption in 2022 ¹⁰), the recast Directive enshrines into law for the first time a buildings-specific target amounting to 49% of renewable energy in final energy consumption by 2030 (Art. 15a).

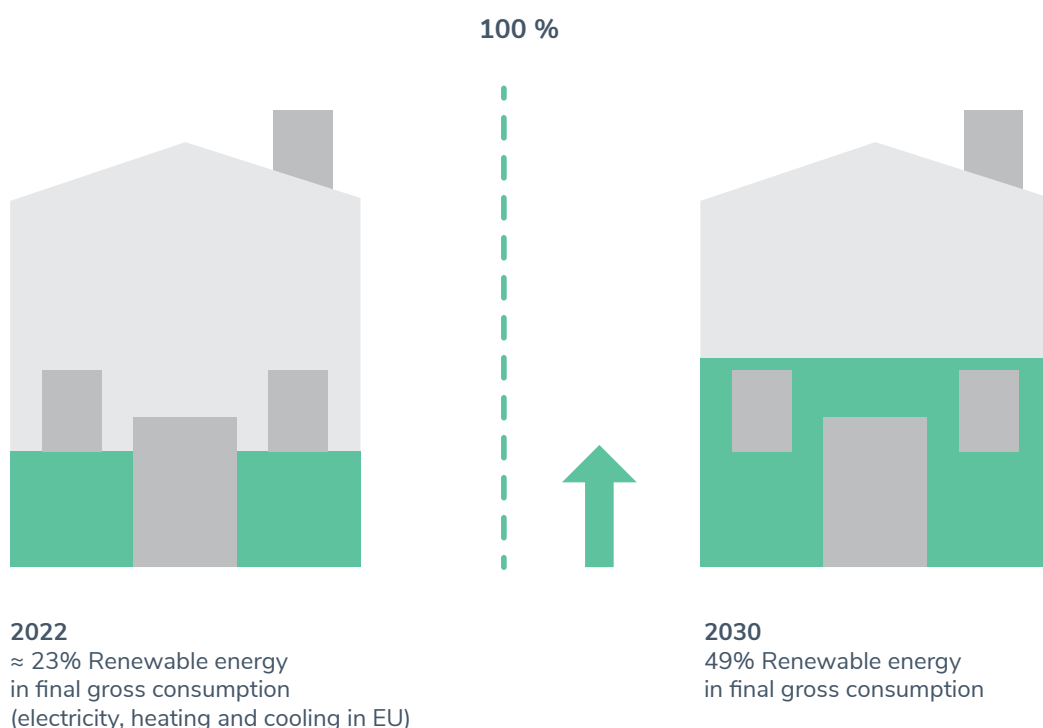


Figure 6: Renewable energy in buildings: estimated current and expected 2030

Energy Efficiency Directive demands more efficient use of energy in buildings

Energy efficiency is key to reducing the burden of energy bills on citizens and to do so the recast Energy Efficiency Directive (EED) sets new ambitious targets for energy demand reduction by 2030 ¹¹. To achieve these reductions, buildings will need to become increasingly more energy efficient, contributing to economy-wide yearly final energy consumption savings of at least

0.8%, 1.3%, 1.5% and 1.9% in 2021-2023, 2024-2025, 2026-2027, and 2028-2030, respectively, relative to 2016-2018 (Art. 8). Setting targets for the EU, the EED seeks to reduce both primary and final energy consumption across all sectors by introducing energy savings obligations alongside monitoring and reporting procedures.

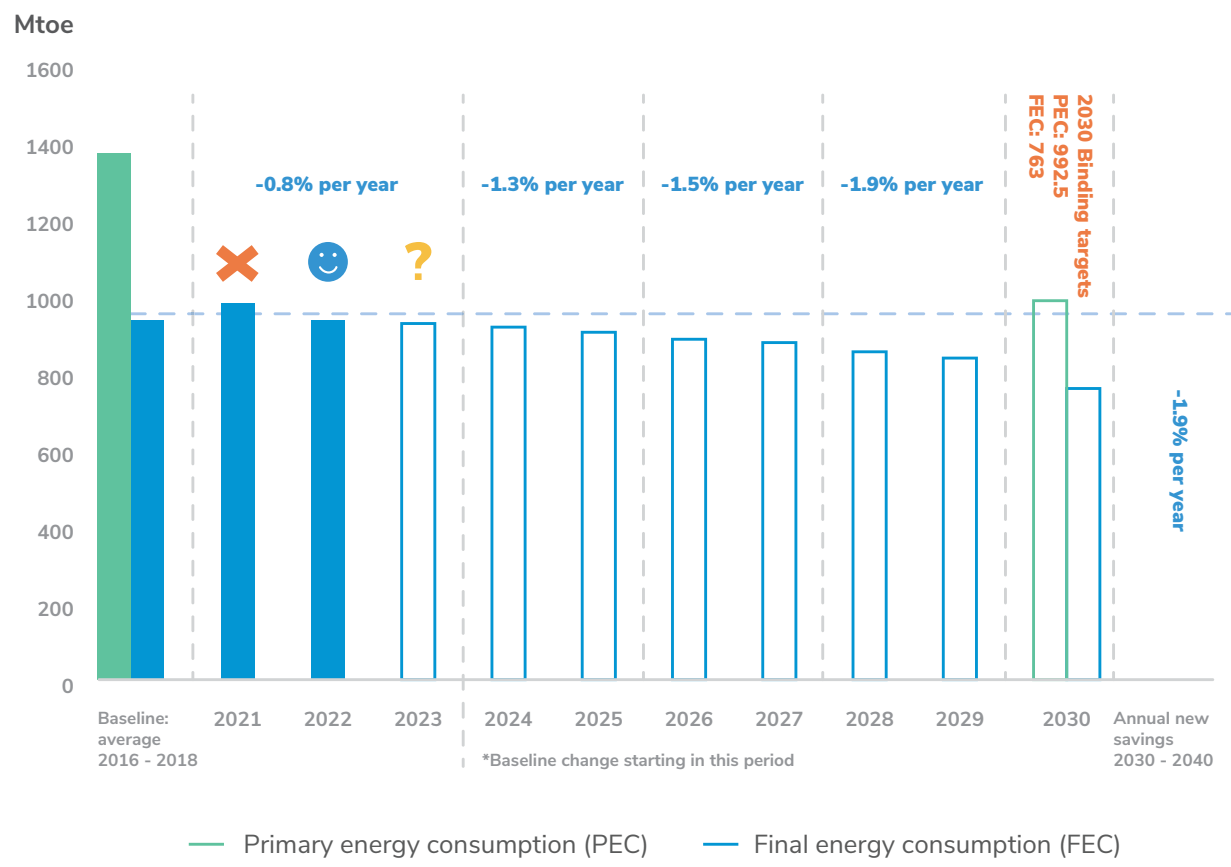


Figure 7: Energy reduction targets in the EED

Decarbonising domestic heating systems: the Emissions Trading System 2 and the Social Climate Fund

The new Emissions Trading System on heating and road transport (ETS2) is meant to reflect better the environmental cost of fossil fuels used in these sectors ^{12 13}. As fuel suppliers will add the ETS2 cost to their selling price,

the cost of fossil fuels will increase.

The ETS2 will become operational in 2027 and complement carbon pricing systems in place in several Member States.

EU Emissions Trading System (ETS)

The EU's ETS is one of the largest carbon markets globally. It is based on a "cap and trade" principle, where the cap – reduced annually – is expressed in allowances. Each allowance gives installations the right to emit one tonne of CO₂eq.

To support vulnerable households in making homes fossil-free and energy-efficient, the EU set up the Social Climate Fund (SCF), which will be fed with revenues from carbon pricing under the ETS2 ¹⁴.



ETS 2



Social Climate Fund



Social Climate Plans

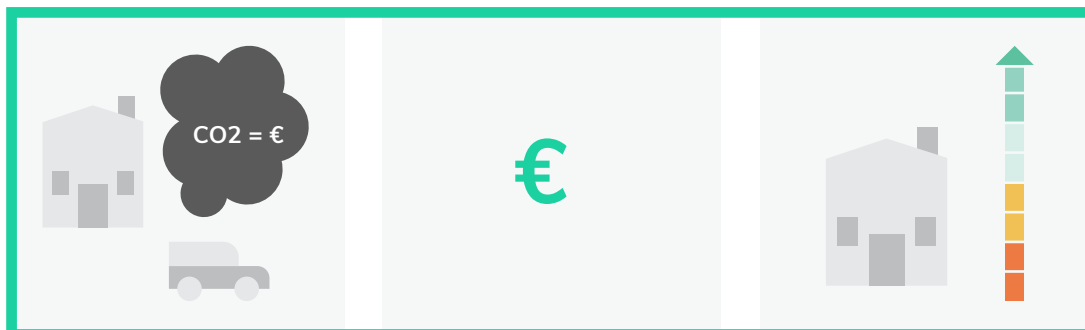


Figure 8: How do the ETS2 and the Social Climate Fund work?

Environmental credentials of construction products: the Construction Products Regulation

The Construction Products Regulation (CPR) regulates how construction products are placed on the EU market¹⁵. It establishes rules (i.e., harmonised standards and European Assessment Documents (EADs) and Technical Assessments^d) on how to express the performance of construction products regarding their function, safety, and environmental footprint. These characteristics must be documented in a declaration of performance and conformity (Art. 15). This is a pre-requisite for the CE marking (Art. 17), which certifies that products have been assessed to meet high safety, health, and environmental protection requirements.

In its revised form, the CPR mandates the disclosure of environmental impacts of construction products using Environmental Product Declarations (EPDs), requiring manufacturers to conduct a lifecycle assessment on an extensive range of environmental indicators (Annex II). This obligation will be gradually applied to products placed on the market. According to the timeline in Art. 15 (Figure 9) manufacturers will have to disclose lifecycle GWP as of 8 January 2026, adding nine more indicators as of 9 January 2030 and, eventually, all 16 indicators by 9 January 2032 – drafting a full EPD. The EPDs will be embedded into the declarations of performance and conformity¹⁶.

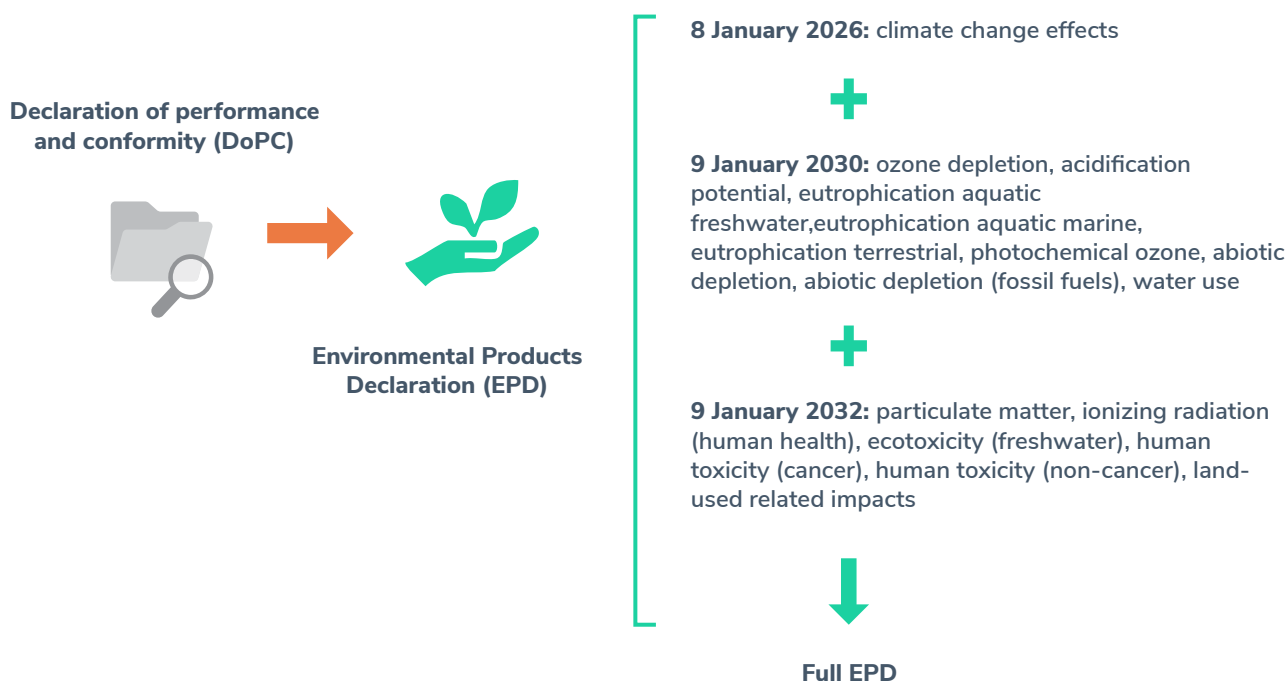


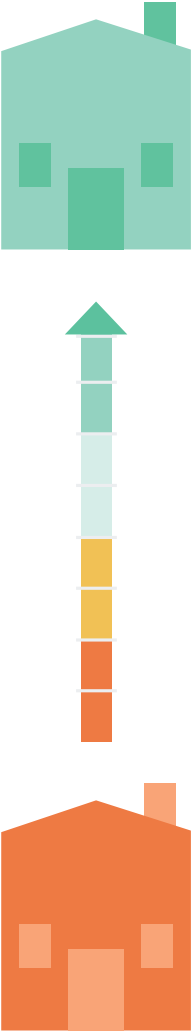
Figure 9: Environmental indicators in the declaration of performance and conformity

^b For more information, please visit this site for a summary of references of harmonised standards in the EU Official Journal (DocsRoom - European Commission (europa.eu)) and this for EADs (What is an ETA? | EOTA)

Milestones to 2050

Multiple targets are set on European buildings in the run-up to 2030 and the transformation of the building stock into a zero emissive one in 2050. With most pieces of legislation being Directives, Member States must act swiftly towards ambitious implementation at

national level. Civil society organisations will continue to play a key role in this, while also ensuring ambition at the EU-level.



2050	EPBD: zero-emission building stock
2035	EPBD: 20-22% energy savings in residential building stock
2033	EPBD: 26% energy savings in non-residential building stock
2032	CPR: DoPC disclosing 16 LCA environmental indicators
2030	EPBD: all new buildings are zero-emission, 16% energy savings from residential and non-residential building stock, solar energy extended RED III: 49% RES in buildings EED: PEC 992.5 and FEC 763 Mtoe CPR: DoPc disclosing 10 LCA environmental indicators
2029	EPBD: solar energy in more buildings EED: energy demand reduction (1.9% FEC)
2028	EPBD: solar energy in more buildings
2027	EPBD: sustainable mobility extended, solar energy in more buildings ETS II: start EED: energy demand reduction (1.5% FEC)
2026	EPBD: roll-out of solar energy CPR: DoPC disclosing 1 LCA environmental indicator (life cycle GWP)
2025	EED: energy demand reduction (1.3% FEC)
2024	EPBD: sustainable mobility mandatory

Figure 10: Milestones for European buildings in the run-up to a zero emitting stock

References

- 1 European Commission. Energy Performance of Buildings Directive.
Available online at: [Energy Performance of Buildings Directive \(europa.eu\)](#)
- 2 European Commission. Level(s). European framework for sustainable buildings.
Available online at: [Level\(s\) - European Commission \(europa.eu\)](#)
- 3 European Environment Agency. Greenhouse gas emissions from energy use in buildings in Europe.
Available online at: [Greenhouse gas emissions from energy use in buildings in Europe | European Environment Agency's home page \(europa.eu\)](#)
- 4 European Environment Agency. EEA greenhouse gases – data viewer.
Available online at: [EEA greenhouse gases — data viewer — European Environment Agency \(europa.eu\)](#)
- 5 Directive (EU) 2024/1275 of the European Parliament and of the Council of 24 April 2024 on the energy performance of buildings (recast) (Text with EEA relevance).
Available online at: [Directive - EU - 2024/1275 - EN - EUR-Lex \(europa.eu\)](#)
- 6 European Commission. Renewable energy directive. Available online at: [Renewable Energy Directive \(europa.eu\)](#)
- 7 Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652.
Available online at: [Directive - EU - 2023/2413 - EN - Renewable Energy Directive - EUR-Lex \(europa.eu\)](#)
- 8 Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast) (Text with EEA relevance).
Available online at: [Directive - 2018/2001 - EN - EUR-Lex \(europa.eu\)](#)
- 9 European Commission. BSO – Building Stock Observatory.
Available online at: [EU Building Stock Observatory - Factsheets \(europa.eu\)](#)
- 10 Eurostat (2024). Energy statistics - an overview.
Available online at: [Energy statistics - an overview - Statistics Explained \(europa.eu\)](#)
- 11 Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 (recast).
Available online at: [Directive - 2023/1791 - EN - EUR-Lex \(europa.eu\)](#)
- 12 Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a system for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC (Text with EEA relevance). Available online at: [EUR-Lex - 02003L0087-20240301 - EN - EUR-Lex](#)
- 13 European Commission. Emission trading scheme (ETS) 2.
Available online at: [ETS2: buildings, road transport and additional sectors - European Commission \(europa.eu\)](#)
- 14 European Commission. Social Climate Fund.
Available online at: [Social Climate Fund - European Commission \(europa.eu\)](#)
- 15 Regulation (EU) 2024/3110 of the European Parliament and of the Council of 27 November 2024 laying down harmonised rules for the marketing of construction products and repealing Regulation (EU) No 305/2011 (Text with EEA relevance). Available online at: [Regulation - EU - 2024/3110 - EN - EUR-Lex](#)
- 16 Position of the European Parliament adopted at first reading on 10 April 2024 with a view to the adoption of Regulation (EU) 2024/... of the European Parliament and of the Council laying down harmonised rules for the marketing of construction products [xxx] and repealing Regulation (EU) No 305/2011.
Available online at: [Texts adopted - New Regulation on Construction Products - Wednesday, 10 April 2024 \(europa.eu\)](#)



About ECOS

ECOS - Environmental Coalition on Standards is an international NGO with a network of members and experts advocating for environmentally friendly technical standards, policies, and laws.

We ensure the environmental voice is heard when they are developed and drive change by providing expertise to policymakers and industry players, leading to the implementation of strong environmental principles.

Environmental Coalition on Standards

c/o WeWork
Rue du Commerce 31
1000 Brussels, Belgium
+32 2 899 76 80
ecostandard.org

Follow us



@ECOS_Standard



ECOS-NGO

Author:

Thomas Trevisan,
Programme Manager

Editor:

Katarzyna Krok,
Communications Manager



ecos